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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,201	05/03/2001	Richard John Moore	GB920000064US1	6511

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William A. Kinnaman, Jr.  
IBM Corporation  
Intellectual Property Law Department  
2455 South Road, M/S P386  
Poughkeepsie, NY 12601-5400

EXAMINER

CAO, DIEM K

ART UNIT PAPER NUMBER

2126

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/848,201	Applicant(s) MOORE, RICHARD JOHN	
	Examiner Diem K Cao	Art Unit 2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 5, 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-14 remain in the application. Applicant has amended claim 7.

#### *Allowable Subject Matter*

2. Claims 5 and 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 6, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deianov et al. (U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1).
5. **As to claim 1**, Deianov teaches an activation module (an interception module, a modified loader program; col. 3, lines 35-54), an interception module (a system call wrapper; an initialization module; col. 3, lines 47-54), the activation module being adapted to load the interception module (the modified loader loads an initialization module and a system call wrapper; col. 3, lines 47-54), the activation module being adapted to redirect the one or more API calls by creating an alias to any page containing an entry point for an API call to be

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intercepted and to write the address of the interception module to the alias (Pointers 114 to system calls 115 are located in an operating system interrupt vector table 113 ... to the interception module 111 to execute the interception module 111; col. 6, lines 5-38), the activation module being adapted to provide to any instances of the interception module the original entry points for the one or more API calls (the interception module 111 first writes, to the return address area 129 of the system call wrapper 125, the address to which to return execution after the system call wrapper 125 terminates; col. 8, line 56 – col. 9, line 13), and the interception module being adapted to selectively provide modified functionality for the intercepted API calls (When a call is made ... not all system calls 115 need be intercepted; col. 6, lines 35-40 and alternative object code to be executed instead of the system call ... system call wrapper; col. 1, line 64 – col. 2, line 2).

6. However, Deianov does not teach loading the interception module to occupy a location in a shared region of virtual memory as long as interception of the API calls is required. Hammond teaches loading the interception module to occupy a location in a shared region of virtual memory as long as interception of the API calls is required (an injection dynamic link library called INJECT.DLL is loaded from the injection application into a second pre-determined memory location within an area of shared memory; col. 8, lines 36-67).

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hammond and Deianov because Hammond teaching of loading the interception module would improve the flexibility of Deianov's system by

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dynamically injecting the execution logic into a shared memory space of a window operating system (col. 2, lines 56-58)

8. **As to claim 2**, Deianov does not explicitly teach the activation module is adapted to load the interception module at system initialization time. Hammond teaches the activation is adapted to load the interception module at system initialization time (an injection application is started with a kernel application ... for the windowed operating system; col. 5, lines 46-58).

9. **As to claim 6**, Deianov teaches the interception module is adapted to export one or more global variables located in its code segment to the activation module (The initialization module 123 ... select process 107; col. 7, lines 5-29), each global variable corresponding to an API call to be intercepted (the entry point in the system call wrapper; col. 7, lines 5-29), the activation module being adapted to create an alias to any page containing one of the one or more global variables to write the original entry point of the one or more API calls to the respective aliases (Pointers 114 to system calls 115 are located in an operating system interrupt vector table 113 ... to the interception module 111 to execute the interception module 111; col. 6, lines 5-38).

10. **As to claim 12**, Deianov does not explicitly teach one or more API calls to be intercepted is a call for allocating memory, however, Deianov teaches a system call performs some system operations, such as the access of a system hardware or software (col. 1, lines 31-44). It would have been obvious the call for allocating memory could also be intercepted.

11. **As to claim 14**, Deianov teaches computer program code stored on a computer readable storage medium for intercepting API calls when executed on a virtual memory computer system, the program code comprising the system of claim 1 (A computer memory 101 ... into the operating system 117; col. 5, lines 50-66).

12. Claims 3-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deianov et al. (U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1) further in view of Pietrek (Learn System-Level Win32 Coding Techniques by Writing an API Spy Program).

13. **As to claim 3**, Deianov teaches the activation module is adapted to read a configuration file (a list of selected processes ... of a default loader program; col. 8, lines 1-11).

14. However, Deianov does not teach the configuration file containing data defining the API calls to be intercepted and the manner in which the API calls are to be modified, the activation module being adapted to write the configuration data to an area of shared memory and to provides to all instances of the interception module the location of the shared memory. Pietrek teaches the configuration file containing data defining the API calls to be intercepted (the spy DLL reads an input file ... about the function's parameters; page 8), the activation module being adapted to write the configuration data to an area of memory (the code portion of the stub ... on the stack; page 8), and to provides to all instances of the interception module the location of the shared memory (As the spy DLL builds each stub ... the import section; page 9).

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Pietrek and Deianov because Pietrek teaches a method to monitor multiple applications by creating an extensible list of functions to be intercepted and no modification to the programs (page 1).

16. **As to claim 4**, Deianov does not teach an instance of the interception module is responsive to receiving a redirected API call to load itself within the process making the API call so that a segment of global data is made available to each instance of the interception module.

17. Pietrek teaches an instance of the interception module is responsive to receiving a redirected API call to load itself within the process making the API call so that a segment of global data is made available to each instance of the interception module (By freezing the target process ... code for the program; pages 5-6).

18. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Deianov and Pietrek because Pietrek teaches sharing data to multiple instances of the interception module would improve the performance by reducing the memory usage.

19. **As to claim 11**, Deianov does not teach the interception module is adapted to check that it is not being called recursively prior to loading itself. However, Deianov teaches recursively execute the wrapper is avoided by check on the flag (col. 7, lines 29-40 and col. 8, lines 44-55).

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It would have been obvious to one of ordinary skill in the art to have included checking of recursively called the Deianov's system because it provides a method not to load multiple instance of the same code into the process address space.

20. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deianov et al. (U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1) further in view of Admitted Prior Art (APA).

21. **As to claim 13**, Deianov does not teach the activation module and the interception module are adapted to operate on OS/2 Warp Version 3 SMP and Warp Version 4.5 operating systems. Deianov teaches the activation module and the interception module are adapted to operate on the multitasking system (col. 1, lines 8-11). APA teaches OS/2 Wrap Version 3 SMP and Warp Version 4.5 operating system for used by 32-bit applications (page 2, lines 18-25). It would have been obvious to apply the teaching of APA to the system of Deianov because it provides a method to run the application in different operating systems.

### ***Response to Arguments***

22. Applicant's arguments filed 5-5-2004 have been fully considered but they are not persuasive.

As to Applicant's arguments (page 6, lines 5-14) regarding Hammond does not teach loading an interception module to occupy a location in a shared region of virtual memory as long as interception of the API calls is required, and there is no motivation/suggestion to combine the

teaching of Deianov and Hammond because Deianov teaches that the module be loaded in the OS address space 105, examiner respectfully disagrees because Deianov teaches the interception module (a system call wrapper, an initialization module; col. 3, lines 47-54 and Fig. 1) is loaded into the user address space, and could be loaded into the OS address space in different embodiment, and Hammond teaches loading an interception module in a shared region of virtual memory (see rejection of claim 1 above). Hammond further teaches the location is available to all the processes, i.e. the interception is in the shared virtual memory as long as other processes still need it. Therefore, the combination of Deianov and Hammond teach the claimed limitation.

### *Conclusion*

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diem K Cao whose telephone number is (703) 305-5220. The examiner can normally be reached on Monday - Thursday, 9:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


**Any response to this action should be mailed to:**

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

Diem Cao

  
MENG-AL T. AN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100